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염분 섭취가 FGF23와 좌심실 질량지수의 상관 관계에 미치는 영향

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Sodium Intake Modifies the Relationship between FGF23 and LV Mass Index

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Many studies showed that FGF23 is strongly and dose dependently associated with CKD progression, cardiovascular risk factors such as vascular calcification (VC), left ventricular hypertrophy (LVH), and mortality. But, these associations were determined by several factors. Therefore, we hypothesized that the degree of salt intake effects the associations of FGF23 with LV mass index.

KNOW-CKD is an on-going, prospective, university hospital based observational cohort study under the sponsorship of Korean Center for Disease Control and Prevention. Cross-sectional analysis of echocardiography data and other clinical data was performed in 1529 participants of KNOW-CKD. Salt intake was assessed by determining urinary sodium excretion from the collected urine samples and we devided participants into two groups according to the degree of salt intake.

Among the 1529 study participants, the mean age was 53.6±12.4 years; 61.5% of participants were male. The median FGF23 concentration was 17.85 RU/ml (interquartile range [IQR]=0.42, 31.28), and the mean eGFR was 50.9±31.7 ml/min per 1.73m^2. There were significant correlations between LV mass index and parameters related to mineral bone disorder (MBD) regardless of salt intake. But multiple regression analysis showed that the relationship between FGF23 and LV mass index was stronger on the low salt diet group (low salt group vs high salt group: std β=0.179, p=0.046 vs std β=0.072, p=0.491).

We observed that the association of FGF23 with LV mass index was stronger in CKD patients with low salt diet. We suggested that the interaction between phosphate and sodium intake might be an important determinant of cardiovascular morbidity in CKD patients.

Key Words: 만성 신질환, FGF23, 좌심실 질량지수, 염분섭취
Chronic kidney disease, FGF23, LV mass index, Salt intake